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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/568,697

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Wolfgang Eichmann

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EXAMINER

BLACKWELL, GWENDOLYN

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

01/22/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/568,697	Applicant(s) EICHMANN ET AL.	
	Examiner GWENDOLYN BLACKWELL	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-33 is/are pending in the application.
- 4a) Of the above claim(s) 32-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/17/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 16-31, in the reply filed on November 5, 2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 20 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 20 and 24 contain formulas for materials used in the multilayer system. In the aforementioned formulas, the subscript "x" is used without a clear definition as to the limits of "x". Clarification is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 16-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent no. 4,482,237, Bosshart et al in view of United States Patent no. 4,761,346, Naik.

Regarding claims 16-17, 27-28, and 30-31

Bosshart et al disclose a multilayered coating applied to a metal substrate. The coating is comprised of a metallic material (bond coat) adhered to the metal substrate, interlayers of metal/ceramic materials having a compositional gradient going from metal to ceramic, and an outer layer of 100% ceramic material, (columns 2-3, lines 55-40). Bosshart et al does not specifically disclose a separate metal layer between the metallic layer and the beginning of the interlayers or that the coating structure is repeated more than once.

Naik disclose an erosion resistant coating system formed on a metallic substrate wherein the coating is comprised of an interlayer, a metal layer, and a ceramic hard layer. In addition, a transitional zone between the metal layer and the ceramic hard layer can be made by creating a compositional gradient between the two, (columns 4-6, lines 65-65).

It is well known in the art that transitional gradient layers transition from a majority of one material to another material. As such, although Bosshart et al does not specifically disclose

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that there is a separate metal layer between the intermetallic layer and the metal/ceramic interlayers, it would have been obvious to one skilled in the art at the time of invention that a separate metal layer could have been placed between the intermetallic layer and the interlayers, as demonstrated by Naik. Furthermore it would have been within the skill of one in the art at the time of invention to determine the optimal number of layers through routine experimentation while balancing economic considerations.

Regarding claims 18-19

The substrate can be nickel-based. The metallic material can be a nickel-chrome-aluminum alloy, (Bosshart, column 2, lines 55-66).

Regarding claims 20-25

The substrate can be titanium alloys, nickel based and cobalt based alloys, (Naik, columns 4-5, lines 65-6). The first layer can be selected from Group VI to Group VIII. The second layer can be from Group III to Group VI. The third and/or fourth layer can be a boride, carbide, nitride or oxide of a Group III to Group VI metal, (Naik, columns 5-6, lines 15-65).

Regarding claim 26

The total coating thickness can be in the range of 0.4 to 4.0 mils (10 to 101 micrometers), (Naik, claim 2). It would have been obvious to one of ordinary skill in the art at the time of invention to have selected the overlapping portion of the ranges disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness. *In re Malagari*, 182 USPQ 549.

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Regarding claim 29

The component is used as a turbine outer air seal, a shroud, (Bosshart, column 1, lines 7-21).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GWENDOLYN BLACKWELL whose telephone number is (571)272-5772. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GWENDOLYN BLACKWELL/
Primary Examiner, Art Unit 1794